

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A synchronous DRAM comprising:
a first input terminal which receives an external clock signal;
a second input terminal which receives a clock enable signal;
a plurality of third input terminals which receive command signals;
a fourth input terminal which receives an external power supply voltage; and
a voltage limiter circuit which generates an internal power supply voltage lower than said external power supply voltage; and
a control circuit which receives said command signals in synchronism with said external clock signal,
wherein said DRAM is in a power down mode when said clock enable signal is low,
wherein said DRAM is out of said power down mode when said clock enable signal is high,
wherein said voltage limiter circuit is not in operation when said DRAM is in said power down mode, and
wherein said voltage limiter circuit is in operation when said DRAM is out of said power down mode, and

wherein said voltage limiter circuit starts operating in synchronism with a rising edge of said clock enable signal.

2. (Original) A synchronous DRAM according to claim 1,
wherein said voltage limiter circuit stops operating in synchronism with receiving a set of command signals.

3. (Canceled)

4. (Currently Amended) A synchronous DRAM comprising:
a first power supply circuit which receives an externally supplied voltage and outputs an internal supply voltage; and
a second power supply circuit which receives said externally supplied voltage and outputs said internal supply voltage,

wherein said first power supply circuit is not in operation when a semiconductor device is in a power down mode for said synchronous DRAM, and

wherein said second power supply circuit is continuously in operation during said power down mode,

wherein a voltage limiter in said first power supply circuit starts operating in synchronism with a clock enable signal applied to said synchronous DRAM prior to receipt of a power down mode end command by said synchronous DRAM.

5. (Currently Amended) A synchronous DRAM comprising:

a first power supply circuit which receives an externally supplied voltage and outputs an internal supply voltage; and

a second power supply circuit which receives said externally supplied voltage and outputs said internal supply voltage,

wherein said synchronous DRAM operates in a power down mode and a mode, prior to said power down mode, in which said synchronous DRAM receives a clock signal and stands by for a power down mode command signal to begin said power down mode, and

means for turning on a voltage limiter in one of said first or second power supply circuits prior to receipt of a power down mode end command being applied to the synchronous DRAM,

wherein said first power supply circuit is not in operation when said semiconductor device is in said power down mode, and

wherein said second power supply circuit is continuously in operation during said power down mode.

6. (New) A synchronous DRAM according to claim 1, wherein said rising edge of said clock enable signal is prior to a rising edge of the external clock signal which terminates the power down mode.

7. (New) A synchronous DRAM comprising:

a first input terminal which receives an external clock signal;

a second input terminal which receives a clock enable signal;
a plurality of third input terminals which receive command signals;
a fourth input terminal which receives an external power supply voltage; and
a voltage limiter circuit which generates an internal power supply voltage lower than said external power supply voltage; and

a control circuit which receives said command signals in synchronism with said external clock signal,

wherein said DRAM is in a power down mode when said clock enable signal is low,

wherein said DRAM is out of said power down mode when said clock enable signal is high,

wherein said voltage limiter circuit is not in operation when said DRAM is in said power down mode,

wherein said voltage limiter circuit is in operation when said DRAM is out of said power down mode, and

means for turning on the voltage limiter circuit earlier than receipt of a power down mode end command being received by the control circuit.

8. (New) A synchronous DRAM according to claim 1, wherein said means includes means for starting operation of the voltage limiter circuit in synchronization with a rising edge of the clock enable signal.

9. (New) A synchronous DRAM according to claim 8, wherein said rising edge of said clock enable signal is prior to a rising edge of the external clock signal which terminates the power down mode.